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REPORT OF THE CALIFORNIA STATE BOARD OF PUBLIC HEALTH IN COMPLIANCE WITH SENATE RESOLUTION No. 140

The health of the food handler is an important public health problem because he may, through his occupation, act as a significant source of communicable diseases. The food handler may spread disease directly by personal contact or indirectly through contamination of foods or the utensils used in serving foods.

Any of the upper respiratory and droplet borne types of disease (the common cold, influenza, virus pneumonias, tuberculosis, diphtheria, scarlet fever, measles, cerebrospinal meningitis, whooping cough, mumps, infantile paralysis, septic sore throat, et cetera) may be spread by direct transfer of the infectious material to other persons. Also, most of the diseases listed above and syphilis, dysentery, smallpox, typhoid, and the paratyphoids may be spread by contamination of the utensils used in serving foods or to the foods themselves. Some diseases, such as typhoid, dysentery, scarlet fever, septic sore throat and diphtheria may be spread by the infected individual contaminating food and the multiplication of the infectious agent therein.

Some of the common modes of transmission are:

1. By coughing—in the presence of others.
2. By talking—in the presence of others.
3. By coughing into the hands or soiled handkerchief and then handling foods or utensils.
4. By coughing, sneezing, or talking over foods or utensils.
5. By direct transfer of secretions of the nose, mouth, or open lesions on the body, to food or eating utensils.
6. By contamination of the hands with urinary or fecal material containing the infectious agent and then handling foods or eating utensils.

It can be readily seen that in diseases where direct contact is required that the transmission of infection may be either from the food handler to the patron, or from the patron to the food handler or to other patrons. In diseases such as typhoid, where inoculation of the food is required, the reverse direction of infection would not likely occur. For this reason, diseases such as the upper respiratory borne are very seldom traceable to the food handler although they must frequently occur.

It is therefore natural for the public to attempt to prevent the spread of communicable disease by the food handler. There are several means that may be employed in preventing the spread of communicable disease by this worker, namely:

1. Physical examination and the prevention of those capable of transmitting infection from being engaged in food handling.
2. Epidemiological investigation and communicable disease control.
3. Sanitation.
4. Education of the food handler.

The physical examination of the food handler seems to appeal most to the public. Unfortunately the value of such examinations is highly questionable and very expensive. To be effective such an examination must be thorough and include the following procedures:

A. History:
   1. History of tuberculosis, typhoid, dysentery, syphilis, rapid loss of weight.
   2. Immunizations (typhoid—smallpox).
   3. Length of experience as a food handler.
   4. Places and duration of past employment.

B. Physical examination:
   1. Cleanliness of body and clothing.
   2. Signs of chronic skin diseases, rashes, pediculosis.
   3. Condition of scalp, mouth, teeth, gums, throat.
   4. Genitalia—signs of venereal disease.
   5. Chest—sign of tuberculosis.
   6. Extremities—condition of hands and nails.

C. Laboratory examination:
   1. X-ray of chest for tuberculosis.
   2. Sputum for tubercle bacilli.
   3. Nose and throat culture for diphtheria and hemolytic streptococci.
   4. Feces and urine:
      a. Cultures—for typhoid, paratyphoids, and bacillary dysentery. Should consist of at least 3 cultures taken at 48 hour intervals or longer and following the administration of saline cathartics.
      b. Smears—for amoebic dysentery.
   5. Blood test—for syphilis.

This examination is expensive and the question arises as to who should bear the burden of the expense—the public, which it is designed to protect, or the food handler. Also a difficulty is, that even though the examination is carried out completely, no one can definitely certify that the individual is free of the disease other than on the day of the examination. Therefore, to be effective, such an examination should be done many times a year, thus entailing much outlay of time, facilities, and expense.

Many localities have tried routine examinations for food handlers. New York City, after 11 years of experience with such examinations, rescinded the requirement because the procedure was found impractical. When private physicians made the examinations they found three food handlers ineligible per 100,000 examined and when health department physicians made the examinations, 221 food handlers were found ineligible per 100,000 examined. It was concluded that "the cost of physical examinations is not commensurate with the public health benefits obtained." ("Is Routine Examination and Certification of Food Handlers Worth While?"—Wm. H. Best, Jour. A.P.H.A., Vol. 27, pp. 1003-1006, Oct. 1937).

Fort Worth, Texas, on the basis of 10 years experience with food handler examinations concluded that such examinations were unsatisfactory from a public health standpoint. ("The Routine Examination of Food Handlers". T. C. Terrell, M.D., Tex. State Jour. Med., Vol. 35, pp. 227-229, July, 1939).

Connecticut, on the basis of 91,527 food handler examinations, came to the same conclusions. ("Annual Report—Connecticut", State Dept. of Health, 1934, pp. 183-195).

In San Francisco, based upon 4,386 food handlers, the health department officials concluded that the expense involved is not justified by the results obtained ("Food Handler Examinations", J. C. Geiger, M.D., Calif. & West. Med., Vol. 49, pp. 312-313, Oct. 1938).

The United States Public Health Service's Model Food Sanitation Ordinance (June, 1940 Edition) does not require food handler examinations. This ordinance is designed as a model for use by various public health agencies throughout the country and is in effect in 74 counties and 123 municipalities located in 19 States and is rapidly gaining in popularity.

In Los Angeles County, food handler examinations have been conducted since 1939. Over 29,000 individuals have been examined so far, and approximately .034 per cent were excluded as ineligible.

In San Joaquin County, 2,027 food handler examinations have been completed in the past 23 months and four (or 0.2 per cent) were excluded.

A questionnaire was sent by the State Department of Public Health to all full-time health officers in California. Twenty-two replies were received. Included in this group were Los Angeles City and County, San Francisco and Sacramento. None of the replies was in favor of routine food handler examinations.

We have searched our records for the past two years. We have had 1,782 cases of typhoid, paratyphoid, amoebic and bacillary dysentery, as follows:

	1941	*1942*
Typhoid	235	149
Paratyphoid	49	40
Bacillary Dysentery	606	358
Amoebic Dysentery	224	131

Most of these were contracted through the medium of food or drink. Many of them were contracted from carriers within their own families. As a matter of fact, no public food handler was definitely proven to have been responsible for the spread of a communicable disease during this period. Undoubtedly many of the upper respiratory borne disease were contracted through the medium of public food handlers, but none can be definitely said to have occurred during the past two years.

Even though the physical and laboratory examinations of food handlers is unsatisfactory it does not mean that the spread of communicable disease by this vehicle can not be prevented. Communicable disease control in general and epidemiological investigations in particular are most valuable. During the past two years 60 chronic typhoid carriers have been added to our records. Only six (or 10 per cent) of these were found by means of food handler examinations. None of these six was known to have spread the disease. On the other hand, 29 were found as the result of searching for the sources of infection of cases of typhoid; that is, these 29 cariers definitely spread typhoid during the past two years to others. Fortunately none of these was a public food handler.

During 1941 there were 811 cases of food poisoning reported. In 23 outbreaks, five or more people were involved. Food poisoning may not be directly traced to a food handler but is usually traceable to faulty food handling technique.

Milk and milk products are a frequent source of typhoid, scarlet fever, septic sore throat, diphtheria, and bacillary dysentery. Such outbreaks occur because the milk handler either is actively infected with the disease or is a healthy carrier and contaminates the milk. While we have had such outbreaks in the past, during the last two years no such outbreaks occurred. This was prevented by rigid inspection of dairies and the milk handling facilities, adequate refrigeration to prevent bacterial growth, and pasteurization. In short, good milk sanitation prevents milk from being an active means of spreading communicable diseases.

In the same way, good sanitation of food handling establishments prevents foods and food handlers from acting as spreaders of communicable disease. Therefore it is important that restaurants, food establishments, etc., have adequate facilities for caring for foods; that refrigeration be ample and properly maintained; that the construction of the building, walls, food serving surfaces, utensils, et cetera, be constructed of materials easily cleaned; that the building be fly and rodent proof; that insects be kept under control; that facilities for the washing and sterilization of dishware be adequate; and that there be rest rooms for the employees—furnished complete with running water, soap and towels—provided with a sign, readily seen, reminding them to wash their hands thoroughly before leaving the room. Foods should not be carelessly exposed so that the public can contaminate them. Food establishments need not be expensively constructed and equipped but they should be scrupulously clean. The public should feel certain that the dishes and glassware served them are sterile and that the food served thereon is clean and wholesome.

Last, but not the least important, is the food handler himself. A food handler who is scrupulously clean in his personal habits will not be likely to spread a communicable disease. Therefore it is desirable to educate food handlers in good personal hygiene. Fortunately such education is not difficult and not time consuming.

The individual should be taught first about his own habits; for instance—to cough into a handkerchief, not the dish towel, and to wash his hands after such acts—also after blowing his nose, handling his face, hair, eyes, or other parts of his person; to wash his hands thoroughly after each visit to the toilet, and all times before handling food.

Also the individual should be taught to not rub his neck or forehead with the dish towel, carry it in his axilla, or around his neck—not to handle foods with his hands that may be handled with spoons or forks, not to pick up butter pats with his fingers (thumb prints on butter are not particularly appetizing) and not to handle glasses or cups by the rims, or silverware by other than the handles. Also not to use a drinking glass himself and return it to the racks for the public to use without washing it—evidently this is a common practice. It is to be regretted that the public schools pay so little attention to the teaching of personal hygiene. Considerable emphasis is placed by the schools upon the care of the teeth although our teeth represent only a small portion of our personal hygiene. Every child should be taught to wash his hands thoroughly after visits to the toilet, and before eating; to cough or sneeze into a handkerchief; and to develop clean habits in reference to himself and food. If this is done in childhood it becomes a fixed habit to be carried on automatically in later years.

Also, it is important for the employees and employers to report any cases of communicable disease among themselves or immediate family and not to work unless given permission to do so by the health officer. If all cases of communicable disease would be promptly reported, the chances of food handlers working while in a stage of the disease communicable to others would be greatly lessened.

The recommended legislation would be the support of State, city and county health departments—the milk inspection service—and the recommendation of the adoption of the model ordinance and code as prepared and recommended by the United States Public Health Service (June, 1940 Edition).

CONCLUSION

Food handler examinations as a means of controlling communicable disease have been found impractical and do not accomplish the desired results. This is based upon the actual experiences of State, city and county health departments where such examinations have been tried and discontinued.

Actual experience in State, county and city health departments has shown that, for the same amount of money which the periodic examination of food handlers would involve, the following measures would produce the greatest decrease in those communicable diseases that may be spread by food handlers:

1. Improving the sanitation of the food handling establishments.
2. Continuous inspection of the premises where food is handled.
3. Education of the food handler in personal hygiene.
4. Prompt reporting of all cases of communicable diseases to the health department.

MORBIDITY*

Complete Reports for Certain Diseases Recorded for Week Ending January 2, 1943

Chickenpox

797 cases from the following counties: Alameda 75, Butte 2, Calaveras 1, Contra Costa 16, Fresno 29, Humboldt 19, Kern 13, Kings 19, Los Angeles 118, Marin 12, Merced 6, Modoc 37, Monterey 9, Napa 7, Nevada 2, Orange 91, Riverside 29, Sacramento 18, San Bernardino 3, San Diego 71, San Francisco 43, San Joaquin 42, San Luis Obispo 5, San Mateo 4, Santa Barbara 19, Santa Clara 13, Shasta 4, Siskiyou 1, Solano 17, Sonoma 63, Sutter 5, Tehama 2, Trinity 4, Ventura 5, Yolo 2.

German Measles

135 cases from the following counties: Alameda 6, Contra Costa 3, Fresno 1, Los Angeles 9, Modoc 92, Mono 1, Orange 6, Sacramento 1, San Diego 6, San Francisco 3, San Joaquin 4, San Luis Obispo 1, Santa Barbara 1, Santa Clara 1.

Measles

63 cases from the following counties: Alameda 4, Contra Costa 1, Kings 1, Los Angeles 23, Marin 5, Merced 1, Modoc 4, Napa 6, Nevada 1, Riverside 3, Sacramento 2, San Bernardino 1, San Diego 5, San Francisco 3, San Mateo 1, Solano 1, Yolo 1.

Mumps

294 cases from the following counties: Alameda 37, Contra Costa 4, Fresno 6, Humboldt 35, Kern 2, Kings 9, Los Angeles 41, Monterey 1, Orange 19, Riverside 3, Sacramento 4, San Bernardino 9, San Diego 42, San Francisco 15, San Joaquin 44, San Luis Obispo 2, San Mateo 5, Santa Clara 9, Solano 1, Sonoma 5, Sutter 1.

Scarlet Fever

152 cases from the following counties: Alameda 13, Contra Costa 3, Fresno 3, Kern 6, Lassen 4, Los Angeles 45, Madera 1, Marin 3, Mendocino 1, Merced 1, Orange 6, Sacramento 8, San Bernardino 3, San Diego 10, San Francisco 9, San Joaquin 4, San Mateo 5, Santa Barbara 1, Santa Clara 13, Siskiyou 1, Solano 3, Sonoma 3, Sutter 1, Tulare 3, Ventura 1, Yolo 1.

Whooping Cough

171 cases from the following counties: Alameda 23, Eldorado 2, Fresno 5, Kern 4, Los Angeles 57, Marin 3, Mendocino 6, Merced 7, Monterey 7, Napa 1, Orange 10, Riverside 14, Sacramento 4, San Diego 9, San Francisco 12, San Joaquin 3, Santa Cruz 1, Tulare 2, Ventura 1.

Diphtheria

32 cases from the following counties: Alameda 5, Los Angeles 4, Napa 1, Riverside 1, Sacramento 12, San Diego 2, San Joaquin 3, Santa Clara 2, Solano 1, Tehama 1.

Epilepsy

59 cases from the following counties: Fresno 1, Kern 1, Los Angeles 45, Riverside 2, San Bernardino 1, San Diego 3, Solano 1, Sonoma 3, Yuba 2.

Coccidioidal Granuloma

One case from San Luis Obispo County.

Dysentery (Bacillary)

6 cases from the following counties: Alameda 1, Contra Costa 2, Los Angeles 2, Orange 1.

Encephalitis (Infectious)

2 cases from San Joaquin County.

Food Poisoning

20 cases from Los Angeles County.

Influenza (Epidemic)

38 cases reported in the State.

Jaundice (Infectious)

7 cases from the following counties: Los Angeles 1, Sutter 3, Yuba 1, California 2.**

Meningitis (Meningococcic)

10 cases from the following counties: Los Angeles 4, Sacramento 2, San Diego 2, San Francisco 1, California 1.**

Pneumonia (Infectious)

67 cases reported in the State.

Poliomyelitis (Acute Anterior)

2 cases from Los Angeles County.

Rabies (Animal)

2 cases from Los Angeles County.

Rheumatic Fever (Acute)

2 cases from Solano County.

Tularemia

One case from Riverside County.

Typhoid Fever

2 cases from Los Angeles County.

Undulant Fever

3 cases from the following counties: Los Angeles 2, Orange 1.

Gonorrhoea

155 cases reported in the State.

Syphilis

495 cases reported in the State.

"Signs of the times foretell for the future a broadening program of public health. They show an increasing need for specialists as the programs take on special responsibilities."—E. R. Coffee.

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* Data regarding the other reportable diseases not listed herein, may be obtained upon request.

** Cases charged to "California" represent patients ill before entering the State or those who contracted their illness traveling about the State throughout the incubation period of the disease. These cases are not chargeable to any one locality.

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